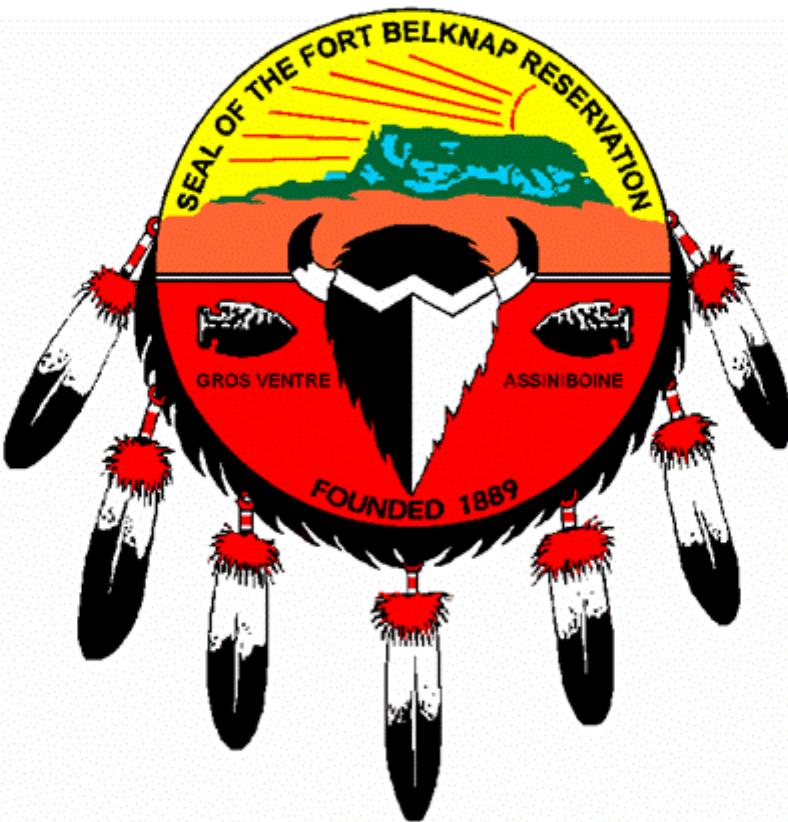


FORT BELKNAP INDIAN COMMUNITY COUNCIL
NONPOINT SOURCE
ASSESSMENT REPORT
December 13,2001



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1.0 INTRODUCTION

1.1 OVERVIEW

The Fort Belknap Environmental Protection Programs was awarded U.S. EPA Section 106 of the Clean Water Act funding in 1991. From 1994 to present, monitoring of surface water has been done on a monthly basis. On an average 15 streams are monitored for past mining impacts, agricultural practices, and runoff from the Landusky/Zortman Mine. These are the three areas of Nonpoint Source Pollution of concern to the Fort Belknap Indian Community.

The stock piling of waste ore from historic mining from August and Little Ben Mining claims in the King Creek drainage had blown out in 1974 pushing tailings onto the Fort Belknap Indian Reservation on it's southern boundary into the King Creek drainage. Concerns of mine tailings moving into the Little Peoples Creek, which is situated below King Creek, has been noted by local residents at several locations along Little Peoples Creek especially in a pool that is used as a wading pond for local community members. In King Creek approximately 123,120 cubic yards of historic mine tailings were removed in the summer of 2000 (1). Continued chemical, physical and biological monitoring of this area to document water quality impacts is necessary to monitor for stream and aquatic restoration.

Agricultural and livestock practices on the Fort Belknap Indian Community have gone unconstrained. Past monitoring of streams show impacted areas, which include, stream bank, stream bed and stream vegetation coverage. Grazing and other disruptive pressures are the major impacts to prairie streams. Habitat Assessments are completed each spring/summer/fall season. (2)

In 1979 a Canadian Gold Mining Company, Pegasus Gold Inc., leased 409 acres of private claims within the Little Rocky Mountains, which lies south of the Fort Belknap Indian Reservation. Pegasus Gold Inc. used a newly developed method of extracting gold from the low-grade ore bodies. By spraying cyanide solution on heap leaching pads gold could be extracted at a profitable cost. Earth moving equipment was used to move the gold rich ore bodies on the leach pads and consequently resulted in tears in the lining pads. Past cyanide spills have left the residences of four local communities, Hays, Zortman, Landusky and Lodge Pole, concerned for their drinking water systems.

1.2 GOALS AND OBJECTIVES

The goal of the NPS Assessment is to list impaired water bodies and prioritize them for implementation of Best Management Practices. The objectives are:

1. Compare collected data and determine which water bodies are impaired.
2. Determine which land use practices are causing the impairment.
3. Determine which best management practices would correct the problems.

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PEOPLES CREEK WATERSHED
King Creek near Fort Belknap southern boundary, June, 1999



BEAVER CREEK WATERSHED
Little Warm Creek near headwater, Oct 1999



PEOPLES WATERSHED
Peoples Creek, August 1998

1.3 LAND USE SUMMARY

The Gros Ventre and Assiniboine Tribes occupy the present-day reservation. It is composed of 653,939 acres in Blaine and Phillips Counties, making it the fourth largest reservation in Montana (**figure 1**). The reservation is rectangular, with an average east to west width of about 28 miles, and a north to south of 40 miles. The Milk River bound the north, the south by the Little Rocky Mountains, with parallel survey lines to the east and west (**figure 2**).

The reservation is comprised of three physiographic units that play a critical role in water distribution. The Milk River valley to the north is a broad, flat plain nestling the Milk River in an easterly flow. The Little Rocky Mountains and encircling foothills to the south embrace the headwaters of numerous streams flowing through the reservation. The central plains, extending 20 to 30 miles from the Little Rocky Mountains accommodate several streams including Peoples Creek. It is a major spring fed drainage from the Bear Paw Mountains and empties into the Milk River on the extreme northeasterly boarder of the Fort Belknap Reservation.

Geology is the major influencing factor on groundwater. Uplifted, tilted sedimentary sequences of the Little Rocky Mountains and minor intrusions of the central plains have created artesian conditions within sandstone aquifers in the central plains in the Judith River, Eagle and Kootenai Formations. The aquifers range in depth from 50 to 300 feet with quality varying from good to poor. Groundwater under water table conditions is obtained from alluvium, glaciofluvial deposits and the Judith River Formation from a depth of a few feet to over 100 feet. The quality ranges from highly mineralized to unusable to excellent. Other potential aquifers are the Ellis Group and the Mission

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Canyon limestone, near their outcrop (Alverson 1965). Generally, the groundwater flow is controlled by the Little Rocky Mountain and is from south to the north.

75.7% or 495,816.35 acres of Fort Belknap Indian Community land base is dominated by livestock grazing and 19% or 106,025.76 acres in dry land and irrigated small grain farming. Fee patent purchase, Fort Belknap Farm and Ranch, located west of the Fort Belknap Indian Reservation is checker boarded with wheat farming and haying operations. To the south, in the Little Rocky Mountains, 5.1% at 33,694.00 acres are used for timber. Native root harvest, recreational use and finally the former 401 acre heap leach gold mining operation that took place in the Little Rocky Mountains consist of uses in the Little Rocky Mountains.

Table 1 lists the land base and uses for the Fort Belknap Indian Reservation. The intensity of land use and its proximity to water significantly influences the potential of nonpoint source pollution. Irrigated croplands, which require water, fertilizer, and pesticide has greater potential for surface and groundwater pollution than does virgin prairie lands which has few of these inputs. In contrast, mining has the potential to release far more toxic compounds; relative to its land use than does agriculture.

Table 1. Fort Belknap Indian Reservations land base and use as of December 5, 1997.

Land Base in acres:

Sub-marginal lands	25,530.10
IRA Purchase	3,079.77
Timber Reserve	26,831.00
Tribal Original/Reserve	<u>29,277.55</u>
Sub-total	84,724.55
Tribal Undivided Interests	22,941.50
Tribal Purchase	<u>138,581.66</u>
Total Tribal Trust Acres	246,247.48
Individual Owned Trust Acres	<u>398,337.83</u>
Total Trust Acres	644,585.31
Fee Patent Lands	30,86.75
Bureau of Reclamation	2,587.47
State School Section	<u>19,583.65</u>
Total Reservation lands	697,617.18

How Trust, Allotted and Fee lands are used in acres:

Grazing	495,816.35
Drycrop	106,025.76
Irrigated croplands	18,265.00
Riparian and Wetlands	43,206.00
Forest	33,694.00

- Sub-marginal lands: Lands returned to Fort Belknap under the Sub-Marginal Land Transfer Act consists of, 28,731.00 acres parcel added to the Fort Belknap Indian Community in 1975. The land is primarily used for agriculture.

1.4 SOCIAL AND ECONOMIC CONDITIONS

The reservation's population consists of 3890 enrolled members and 131 non-enrolled whom reside on or near the Fort Belknap Indian Reservation. Government is the primary economic activity for both sectors of the population through Federal funded employment. However, unemployment is high and is currently around 75%. Most must supplement their income through seasonal jobs such as firefighting or construction related jobs. (3)

1.5 RESERVATION WATERS

Table 2 reveals the tributaries located in the Missouri/Milk River Basins and the Little Rocky Mountains, four first order streams flow to the northeast and are tributaries to the Milk River, while one first order flows to the south and is a tributary of the Missouri River. For purposes of the assessment, the Fort Belknap Community Council has decided to use a stream by stream approach.

Table 2.

Tributaries of the Missouri/Milk River on the Fort Belknap Reservation			
Major Drainage	1 st Order Tributary	2 nd Order Tributary	3 rd Order Tributary
*Missouri River	*Cow Creek	Suction Creek	Little Suction Creek
Milk River	White Bear Creek	Fifteen Mile Creek Three Mile Coulee	
	Peoples Creek	South Fork Peoples Creek	Lodge Pole Creek Duck Creek Little Peoples Creek Jim Brown Creek King Creek South Big Horn Creek Spotted Bird Creek
		Lone Tree Coulee	
		Mud Creek	
		North Fork of Peoples Creek	Kuhr Coulee Myrtle Creek

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Beaver Creek	Big Warm Creek	
	Little Warm Creek	

* Denotes non-reservation watershed.

1.5.1 Categories and Subcategories of Nonpoint Source

Water Quality collected since 1994 has given the Fort Belknap Water Quality Program sufficient data to summarize nonpoint source impacts to the reservation's surface waters by source categories.

Careful interpretation of Table 3 is necessary to understand the relative contributions of each source category to reservation wide impacts. For example, stream miles of impacted streams does not reflect the actual volume of water impaired due to variations in stream channel morphology, volumes, and velocity. When total land area devoted to a particular use is contrasted with the extent of impacted waters on those lands, the following relative impacts by sources category can be more accurately compared: agricultural 143,561.00 acres, land disposal 17.00 acres, community and septic systems 970.00 acres, mining (historical & present) impacted streams are 20.3 acres, not included are riparian zones.

Table 3. Summary of Source categories impacting streams and groundwater. (4)

Source Category	Stream Miles	Land acres potentially affecting groundwater
Agricultural	32.9	
Mining	32.0	
Land Disposal	0	17.0
Hydromodification		
Urban Runoff		
Construction		
Other (community septic)		970.0
TOTALS	66.6	987.0

2.0 ASSESSMENT METHODOLOGY

2.1 SOURCES OF INFORMATION

2.1.1 Monitoring data for this assessment report comes exclusively from Fort Belknap's Environmental Protection Programs Water Quality Division. The Fort Belknap Water Quality Program gathers water samples from 35 locations throughout Fort Belknap, while alternating sample locations to get an overall watershed characterization. The waters of Fort Belknap have been evaluated on a monthly basis since the fall of 1994. The Fort Belknap Environmental Impact Studies (FBEIS) use approved EPA surface water methods to collect samples. The Water Quality Program uses Rapid Bio-assessment

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Protocol (2) to delineate the health/impairments of aquatic macroinvertebrates and ambiance of watercourses.

Chemical parameters include: Metals, Common Ions, Nutrients and Non Metals. Physical parameters include: temperature; air and water, pH, dissolved oxygen; % and mg/l, specific conductivity, salinity and turbidity. Biological parameters include: benthic macroinvertebrate and stream habitat. Hydrogeomorphic parameters include stream width, depth and velocity and are collected during the spring, summer and fall seasons and are calculated on an annual basis.

Water Quality data is primarily assessed through the Microsoft Excel Spreadsheet program using graphs to visually analysis conditions of analytical parameters for water quality. The data is also entered into Access, with the long term goal of using Storet.

2.1.2 CONSULTATION WITH OTHER AGENCIES

NRCS, Agricultural Best Management Practices
U.S. Fish & Wildlife, Fish Assemblage
DEQ, Beneficial Uses Criteria
EPA, Standards, Nonpoint Source

2.2.3 METHOD FOR CONDUCTING NONPOINT SOURCE ASSESSMENTS

This assessment draws upon the experience of many agencies, individuals and programs. As a result, many different levels of information have been used in the preparation of this report. These sources of information may vary, from ambient water quality monitoring data to “best professional judgement”, and are identified as such in the text as both monitoring and/or evaluated respectively.

One objective of this assessment report is to identify waterbodies whose uses have been or are likely impaired (threatened) by nonpoint sources of pollution. Fort Belknap Indian Community Council considers beneficial use of water as those defined and which, will be protected by developing Fort Belknap Water Quality Standards. These uses will include classifications and water quality standards. If these standards are exceeded, it is assumed that beneficial uses are impaired.

Approximately 219.12 stream miles were assessed for impairment from NPS pollution. 16 streams/55.8 miles listed as moderately impairment. Approximately 2 streams/ miles were listed severely impaired.

Evaluative techniques include monitoring, predictive modeling, benthic macroinvertebrates surveys, fishery surveys, citizen complaints, professional judgement and ambient data more than five years old.

Information generated in this manner gives us an idea of the magnitude of water quality problems caused by nonpoint sources. This data is entered into the tribal water quality

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system on an individual stream reach basis, and is updated, as data becomes available. Individual streams and stream reaches can then be compared and evaluated and priorities set for stream improvement projects and for the collection of additional monitoring data. This report will be updated every 3 years.

The Fort Belknap Indian Community is currently developing its own Water Quality Standards. The process will take approximately 2 years. This document uses Montana Water Quality Standards to determine impairment, these standards have not been adopted by the Fort Belknap Indian Community. This document will be revised to reflect Tribal standards when delegation or promulgation is completed.

Table 4. Water Quality Criteria

Variables	1	2	3	4	5	6
Beneficial Uses	Cold water aquatic life	Warm water aquatic life	Public water supply	Primary Cont. Recreation	Irrigation	Livestock Use
Total ammonia pH & Temp. dependent						
Unionized ammonia	0.03	0.03				
Antimony	0.34	0.34	0.014			
Arsenic	0.15	0.15	0.018	0.15		
Barium		2				
Boron				0.3	5.0	
Cadmium ** @50	0.0014	0.0014	0.005			
Chloride		250		700		
Chromium III ** @100	1.7	1.7	0.1			
Chromium VI	0.010	0.01	0.1			
Conductance (micromhos/cm)				1800		
Copper ** @50	0.005	0.005	1.3		5.0	5.0
Cyanide (Total)	0.022	0.022	0.2	0.2	0.2	0.2
Dissolved Oxygen	7.0	7.0	7.0	7.0	3.0	3.0
(Fecal coliform no. /100ml)	0	0	0 per 100ml	200 per 100ml	200 per 100 ml	200 per 100 ml
Fluoride		2.0		2.0	2.0	2.0
Iron	1.0	1.0	0.3	1.0	1.0	20.0
Total Inorganic N **	1.00	1.00				
Lead **	.0032	.0032	0.015		10.0	0.1
Manganese				0.05	10.0	

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Mercury	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Nickel **	1.8	1.8	0.1		2.0	
Nitrite as N	0.5	0.5	1.0		10.0	
Nitrate as N			10.0		10.0	
Nitrite & Nitrate as N		10.0			100	
pH (minimum)	6.5	6.5	6.5	6.5	6.5	6.5
pH (maximum)	8.5	9.0	8.5	8.5	9.0	9.5
Selenium	0.005	0.005	0.05	0.05	0.02	0.5
Silver **	0.004	0.004	0.035			
Sodium			160		160	
Sodium adsorption ratio				5.0		
Sulfate			250			
Temperature (C) min	19.4 ⁰	24.9 ⁰				
Temperature (F) max	66.5 ⁰	77 ⁰				
Thallium			0.002			
Total Phosphorus **	0.10	0.10		0.10		
Total Dissolved Solids			500	1200	1000	7,000
Total Suspended Sediment	30		90			
Turbidity (NTU)	5	50	1			
Zinc @50	.067	.067	2.1	2.1	10.0	25.0

(values in milligrams per liter (mg/l) unless otherwise noted)

** Specific criteria for the protection of aquatic life are based on water hardness. Criteria values given are bases on water hardness of 100 mg/l.

3.0 DISCUSSION OF RESULTS

3.1 REPORTING FORMAT

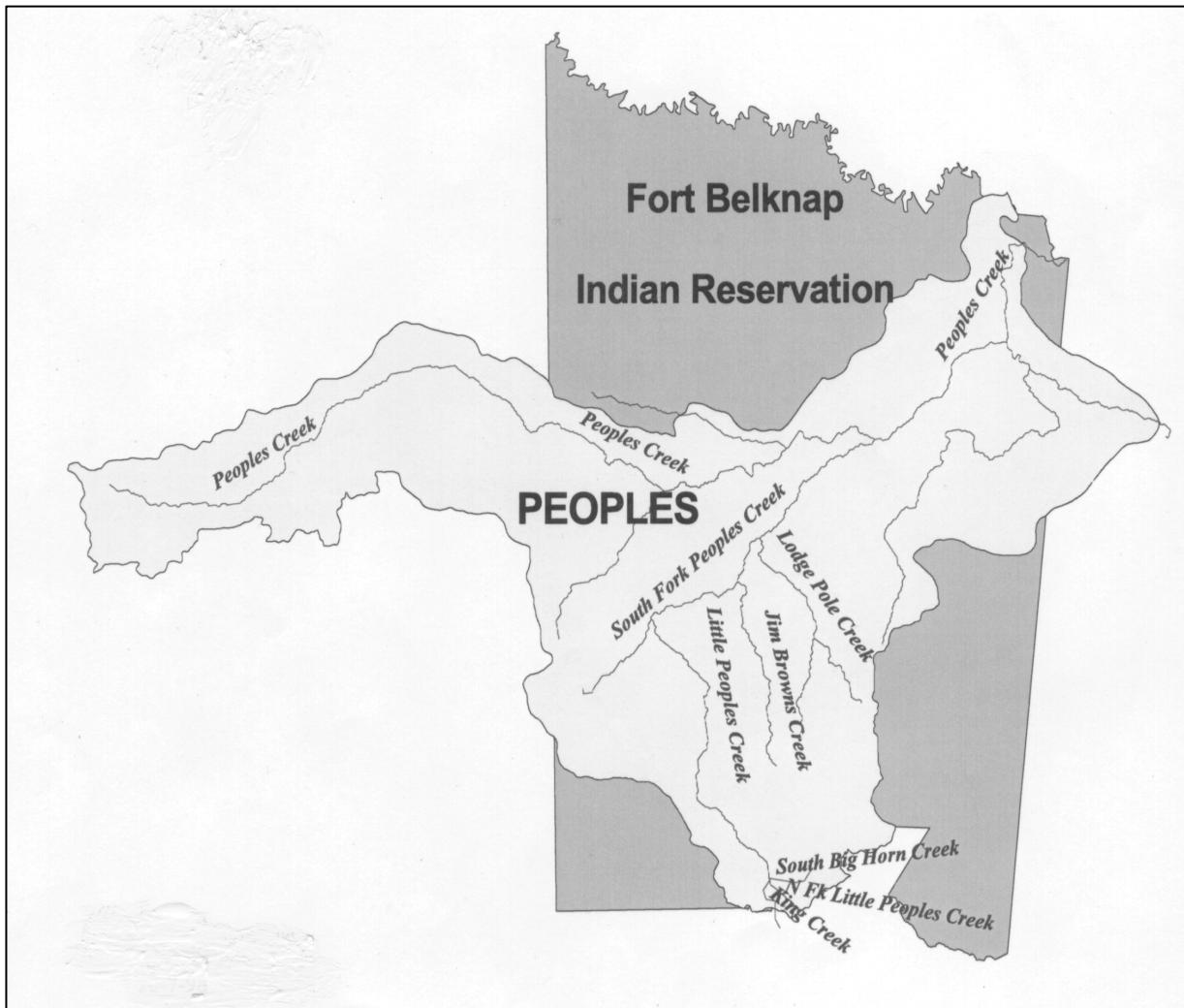
The assessment information is organized by 5 first order tributaries within which there are 8 identified streams or stream tributaries on the Fort Belknap Indian Reservation. For each 1st order tributary the assessment information is presented in a tabular model. The table lists the following information: name of stream, miles of stream, pollutant or cause of impairment, source category, source subcategory, levels of impairment and method of assessment. Generally, only water bodies with **moderate (M)** or **severe impairment (S)** are listed. Only those water bodies are listed which have impacts that are predominantly man-caused and not natural. Under Method an “E” stands for “Evaluated” and “M” for “Measured”. (See Section 2.3 Method for Conducting the Nonpoint Source Assessment.) When information was not known, that the appropriate space in the table was left blank.

Threatened, Moderate, and Severe, categories are described below.

- Threatened – currently meets designated uses but data or assessment information indicate an existing or potential downward trend in quality that, in the absence of additional management, will lead to impairment of designated uses within the next five years.
- Moderate – some interference with designated uses from nonpoint source pollution, but use is not precluded.
- Severe – designated use is precluded because of nonpoint pollution.

3.2 **RESERVATION WATERS**

3.2.0 **Peoples Creek Drainage**



3.2.1 Peoples Creek

The prairie 1st order tributary, Peoples Creek, enters the west mid-section of the Fort Belknap Indian Reservation and flows in a northeast direction eventually meeting with the Milk River. Three monitoring sites are located along Peoples Creek, FB24 is located in T29N, R23E Section 33, along Route 66, mid section of the Fort Belknap Indian Reservation. FB06 is located in T29N, R25E, Section 11, along Rt. 8, 8 miles south of Highway 2, and finally FB05 is located in T31N, R26E Section 32, along Highway 2, 12 miles east of the Fort Belknap Agency. The existing use of Peoples Creek watershed is predominantly rangeland, dryland farming, and irrigation farming. The dryland crop agriculture is characterized by strip fallow operations common in the northern greater plains.

Land ownership is a combination of tribal original, allotted, and state school lands.

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	Non-irrigated crop production Pasture land, Range land		
Peoples Cr.	36			T	M		

Severity: M=Moderate, T= threatened, S=Severe

Method: M = monitored, E= evaluated

3.2.2 Peoples Creek Drainage/South Fork of Peoples Creek

The South Fork of Peoples Creek, a prairie tributary, is located on the southern end of the Fort Belknap Indian Reservation with sources from Duck Cr., Lodgepole Cr., Little Peoples Cr., and Jim Brown Cr. The South Fork of Peoples Creek enters into Peoples Creek on the central plains of Fort Belknap. Use of the South Fork of Peoples Creek includes, rangeland, dryland farming and irrigated farming, fishery and wildlife habitat.

Land ownership includes tribal original, allotted, and state school lands.

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity S	Method M
				Agriculture	Non-irrigated crop production Pasture land, Range land		
S. F. Peoples Cr.	30.2						

Severity: M=Moderate, T=threatened, S=Severe
 Method: M = monitored, E= evaluated

3.2.3 Peoples Creek Drainage/Little Peoples Creek

Little Peoples Creek originates from spring fed headwaters on the western edge of the Little Rocky Mountains. The three streams, King Creek, North Fork of Little Peoples Creek and South Big Horn Creek, that sustains Little Peoples Creek are impaired by past and mining activities; mine tailings were predominate in King Creek. Five monitoring sites are located along Little Peoples reaches, FB07 is sited in T27N, R23E, Section 14, along Route 8, FB08 is located in T26N, R23E, Section 24, north of Hays townsite, FB09 is located in the Mission Canyon in T26N, R24E, Section 32, FB28 is located in T26N, R23E Section 13, east of Route 66, 1.5 miles north of Hays, MT, and FB28b T26N, R23E, Section 13, about 1000 feet upstream from FB28. Land uses include recreation; hunting, camping, cultural includes annual pow-wow, annual sundance, sweat lodge ceremonies and vision quests, berry and root harvest for medicinal and ceremonial purposes. The Little Peoples Creek serves as wildlife habitat and fishery. Several ranchers utilized Little Peoples Creek drainage for irrigation farming, dryland farming, and pasture.

Land ownership includes tribal original, allotted, and state school lands.

Water Body	Stream miles	Pollutant	Source	Subcategories	Severity	Method
Little Peoples Cr.	20.9		Agriculture	Irrigated crop lands Pasture land , Range land	M	M
			Hydrologic/Habitat Mod.	Bridge construction		
			Silviculture	Streambank modification/destabilization Road construction/maintenance		

Severity: M=Moderate, T= threatened, S=Severe

Method: M = monitored, E= evaluated

3.2.4 Peoples Creek Drainage/North Fork of Little Peoples Creek

The spring that originates North Fork of Little Peoples Creek is a third order mountain tributary in the Little Rocky Mountain's Mission Ridge Draw. Two monitoring sites are located along North Fork of Little Peoples Creek in T26N, R24E, Section 33 FB10 is located in Section 33 and FB10b is located in T26N, R24E, Section 34. North Fork of Little Peoples Creek serves as a fishery and wildlife habitat. Recreational use of North Fork of Little Peoples Creek includes, hiking, hunting, fishing, and camping. Cultural activities include; vision quests, berry and root gathering for medicinal and ceremonial purposes.

Land ownership is tribal timber reserve.

Water Body	Stream miles	Pollutant	Source	Subcategories	Severity	Method
North Fork of Little Peoples Cr.	1.2		Silviculture	Road construction/maintenance	M	M

Severity: M=Moderate, T=threatened, S=Severe
Method: M = monitored, E= evaluated

3.2.5 Peoples Creek Drainage/South Big Horn Creek

The spring that originated South Big Horn Creek is in the southwest vicinity of the Little Rocky Mountains, north of Antoine Butte and is located in Swift Gulch. South Big Horn Creek is an intermittent mountain stream that flows during spring runoff and storm events. Two monitoring sites are along South Big Horn, FB12 is located at T25N, R24E, Section 9, about 50 feet above the confluence of King Creek and FB12b is situated at T25N, R24E, Section 10, near the Grinnell Agreement border of Fort Belknap. The South Big Horn drainage serves as a wildlife habitat. Cultural activities include; vision quests, berry and root gathering for medicinal and ceremonial purposes. “Upstream of the South Big Horn Creek confluence with King Creek there is a tributary to South Big Horn Creek locally known as Swift Gulch which drains a portion of the northern side of the Landusky mining operation. Mine drainage within this drainage is limited to a portion of the Queen Rose pit and some road.” (8). Further up Swift Gulch, an abandoned exploration shaft has the influence of Acid Mine Drainage (ADM) and Acid Rock Drainage (ARD) along the streambed and banks that feed South Big Horn Creek.

Land ownership is tribal timber reserve.

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Resource Extraction	Surface Mining		
S. Big Horn Cr.	1.2	SO4,Fe ZN, As	Exploration/Development		Mine tailing	S	M

Method: M = monitored, E= evaluated
 Severity: M=Moderate, T= threatened, S=Severe

3.2.6 Peoples Creek Drainage/King Creek

King Creek is a mountain ephemeral fed spring that originates in the August/Little Ben Pits mining complex, northwest of Antoine Butte, “its upper segment is steep, ephemeral, and intercepts a number of past mining disturbances, including the August Mine, waste dump tailings, and associated roads”(9). Due to heavy use of the groundwater by the heap leach operation of 260 gallons per minute, ore wetting and haul road watering, King Creek is now a trickle. Four monitoring locations are situated along King Creek within a proximity of $\frac{1}{4}$ mile of each other; FB14 is located in T25N, R24E, Section 16, below old beaver dams; FB15, T25N, R24E, Section 16, is situated on an active beaver dam; FB15b is located in T25N, R24E, Section 15, below old beaver dams, and finally FB15c which is 100 feet below FB15b. Historical habitat included, beaver colonies, fisheries, wildlife use area; bedding and watering region. Recreation use included hunting, trapping, fishing, camping, and hiking. The people of Fort Belknap frequent this area for cultural uses and berry and plant harvest for medicinal and ceremonial purposes.

Land ownership is tribal timber reserve.

Water Body	Stream miles	Pollutant	Source	Subcategories	Severity	Method
King Creek	1.0	SO4, FE NO3, N+N	Resource	Extraction Surface Mining Mine Tailings Land Disposal Stream bank Mod./destabilization	S S M Removal of Riparian Vegetation	M S M

Severity: M=Moderate, T=threatened, S=Severe

Method: M = monitored E= evaluated

3.2.7 Peoples Creek Drainage/Jim Brown Creek

Jim Brown Creek is an intermittent mountain stream that flows north out of the Little Rocky Mountains. Jim Brown Creek is spring fed and originates below the Monument Peak. Three monitoring locations are utilized along Jim Brown Creek, FB16b is located in T26N, R24E, Section 11, 200 feet above the mouth of Jim Brown Canyon; FB16 in also located in T26N, R24E, Section 11, near the entrance of the canyon, and finally FB34 is located in T28N, R24E, Section 20, 2.5 miles east of Route 66 on Route 129. Jim Brown Creek serves as wildlife habitat. Other uses include rangeland, dryland farming and irrigated farming. Berry and root harvest take place for medicinal and ceremonial use. The annual area is used for annual sundance and sweatlodge ceremonies.

Land ownership includes; allotted, tribal original, tribal timber reserve, and state school lands.

Water Body	Streams miles	Pollutant	Source	Subcategories	Severity	Method
Jim Brown Cr.	6.4	Agriculture		Irrigated crop production Pasture land	M	M
		Hydrologic/Habitat Mod.	Dam Construction			

Severity: M=Moderate, T=threatened, S=Severe

Method: M = monitored E= evaluated

3.2.8 Peoples Creek Drainage/Lodgepole Creek

Lodgepole Creek is a slow flowing perennial stream that begins at the base of Shell Butte, (R24E, T25N, Sec. 7) just north of the O.K. Pit of Zortman Mine it contains mine spoils and some open pit disturbance in its headwaters. Three monitoring sites is identified along Lodgepole Creek; FB17 is in T26N, R25E, Section 8, south of the Route 8 bridge; FB18 is located in T26N, R25E, Section 20, near a community picnic area near entrance of Little Chief Canyon; and FB35 is located in T28N, R24E, Section 22, 7 miles east of Route 66 on Route 129. The drainage area diverted is estimated at 26 acres, approximately 0.6 percent of the total Lodgepole Creek drainage area that is upstream of the Fort Belknap Indian Reservation.” (8). Lodgepole Creek flows north 6.8 miles before emptying into Peoples Creek. Two miles of homes are located along this stream and have individual septic sewer systems and may be causing an increase of algae, blooming in Lodgepole Creek and at FB17 monitoring station. Lodgepole Creek serves as wildlife habitat and fishery. Land use of Lodgepole Creek includes rangeland, cropland agricultural both irrigation and dryland. Livestock owners lease range units for pasture and grazing practices. Berry and root harvest takes place for medicinal and ceremonial use, sweat lodge ceremonies or observed along creek and vision quests are observed near .

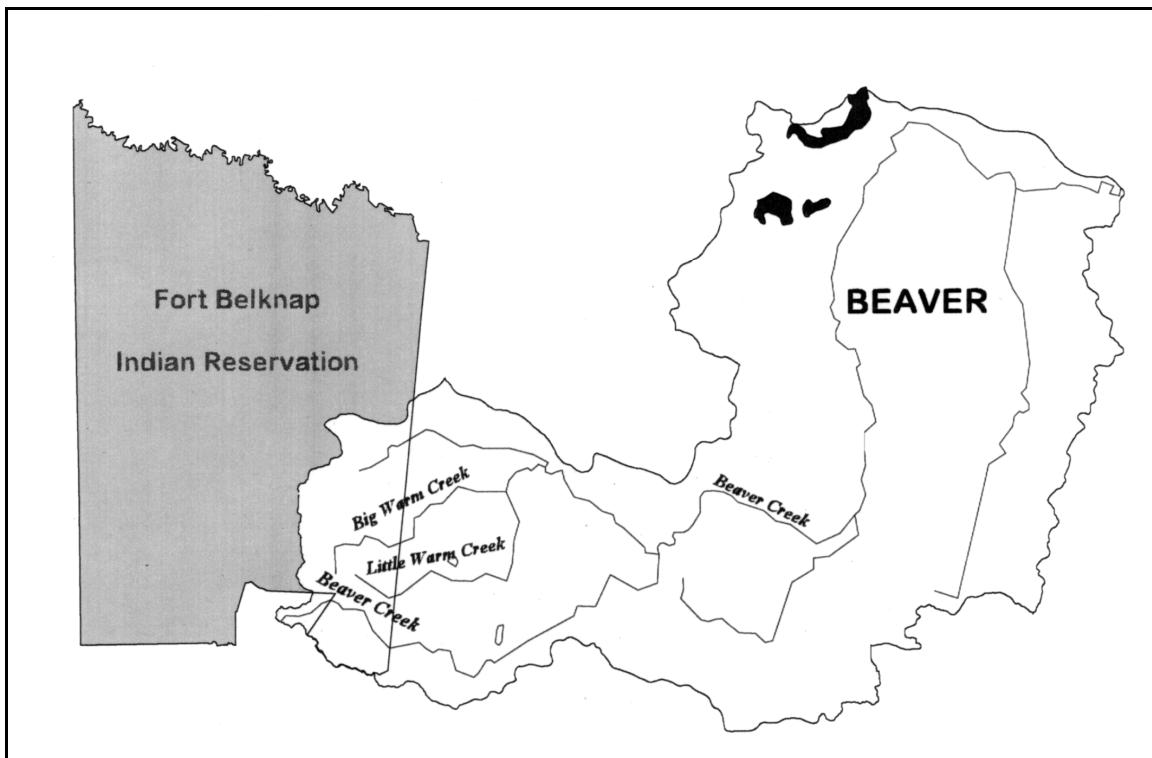
Land Ownership includes; tribal original, tribal timber reserve, allotted, state school lands

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	Irrigated crop production Pasture land Range land		
Lodgepole Cr.	6.8						M
			Urban Runoff	Combined sewers	T	M	

Severity: M=Moderate, T=threatened, S=Severe
Method: M = monitored E= evaluated

3.3.0 Beaver Creek Drainage

The Beaver Creek drainage has two 2nd order tributaries, Big Warm and Little Warm. Both of these tributaries are thermal in nature, and flow in a northeasterly direction and emptying into the Milk River 14 miles west of Saco, Montana.



3.3.1 Beaver Creek Drainage/Beaver Creek

Beaver Creek is located on the eastern side of the Little Rocky Mountains. This foothill stream is an intermittent fed spring from Green Mountain. Three monitoring stations are located on Beaver Creek FB22c is located in T26N, R26E, Section 36, is 1.8 miles near the Grinnell Agreement boundary of Fort Belknap; FB22b is located in T25N, R26E, Section 5, $\frac{1}{4}$ mile off of Route 11 near Doney residence; and FB22 is also located in T25N, R25E, Section 5, near active beaver dams. Some historic hard rock mining occurred in the Beaver Creek, but no present day mines are associated with this drainage. The existing use of Beaver Creek is chiefly cropland, both dryland and irrigated, and pasture and serves as wildlife habitat and a fishery. Native American ceremonies, and berry and root harvest for medicinal and ceremonial purposes occur along Beaver Creek.

Land ownership includes, tribal original, allotted, state school sections

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	M		
Beaver Creek	6.6 miles			Non-Irrigated crop production	M		
				Irrigated crop production			
				Pasture land			

Severity: M=Moderate, T=threatened, S=Severe

Method: M = monitored E= evaluated

3.3.2 Beaver Creek Drainage/Little Warm Creek

Little Warm Creek is a foothill stream and is fed from a thermal spring located on the fringe of the eastern extreme of the Little Rocky Mountains. One monitoring site FB21, T26N, R26E, Section 32, is located near this headwater about $\frac{1}{2}$ mile off Route 11. Little Warm Creek's primary use is pasture, wildlife habitat, and cultural use zone. Wild Plum harvest is observed during late summer near stream.

Land ownership includes, allotted, and tribal purchase/original.

Water Body	Stream miles	Pollutant	Source	Subcategories	Severity	Method
Little Warm Cr. 4.2			Agriculture	Pasture Land	T	M

Severity: M=Moderate, T=threatened, S=Severe
Method: M = monitored E= evaluated

3.3.3 Beaver Creek Drainage/Big Warm Creek

Big Warm Creek is located on the northern portion of the Little Rocky Mountains. This foothill creek is fed from several thermal springs located along the stream. Two monitoring site are located on Big Warm Creek, FB20 is located in T26N, R25E, Section 24 near several spring along the northern base of the Little Rocky Mountains and FB19 is located in T26N, R25E, Section 24 the other is along Rt. 15, east of Lodgepole. The uses include pasture, wildlife habitat, fishery, swimmable, ceremonial and medicinal use area.

Land ownership includes, allotted, tribal original, state school lands.

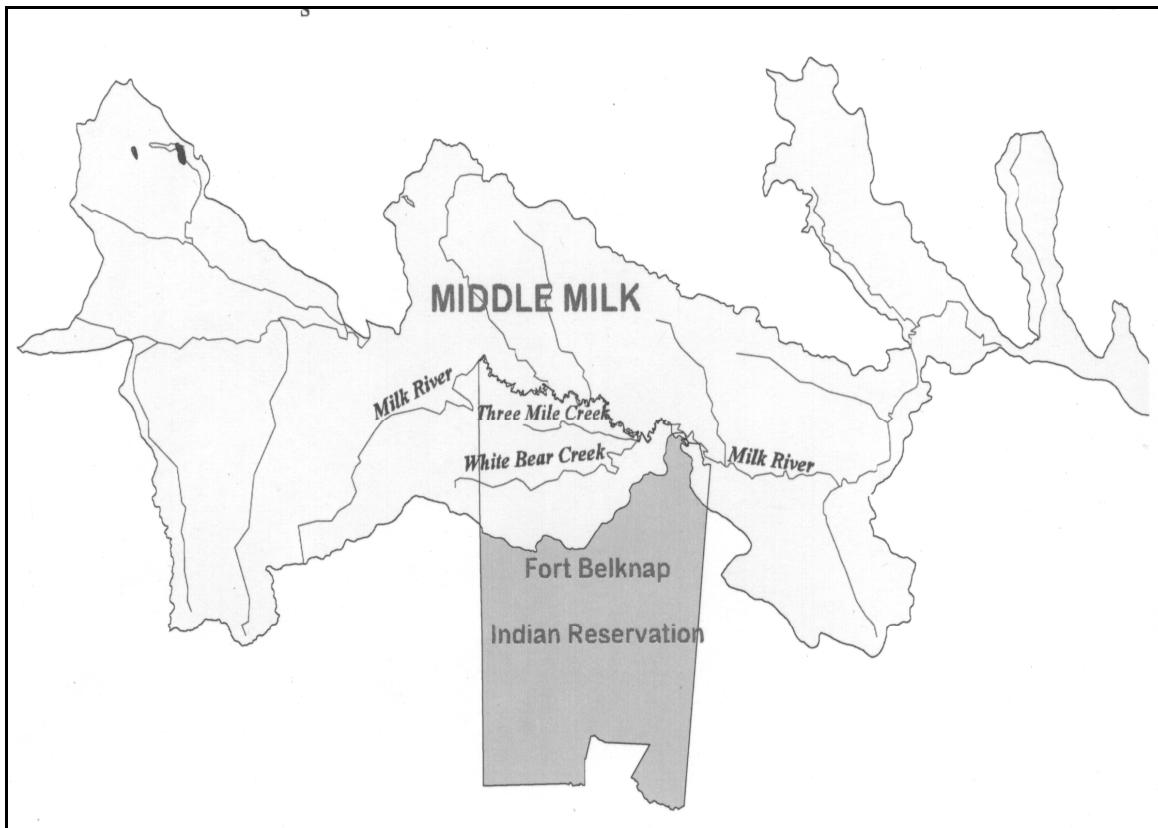
Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	Pasture land		
Big Warm Cr.	6.5		M			M	M

Severity: M=Moderate, T=threatened, S=Severe

Method: M = monitored E= evaluated

Milk River Drainage

The Milk River is the northern boundary of the Fort Belknap Indian Reservation. It is intersected from west to east by People's Creek and has several smaller streams within the reservation boundaries. The Milk River is a tributary of the Missouri River. It originates in Glacier National Park, flowing northeast into Canada and, after 216 miles, returns to the U.S. about 60 miles northwest of Havre, Montana.



3.4.1 Milk River

The Milk River, a major drainage, has three 1st order tributaries flowing within the Fort Belknap Reservation. These include, Peoples Creek, Three Mile Coulee and Fifteen Mile Creek that flow into the Milk River. Three monitoring sites are located along the Milk River, FB01 is located in T32N, R23E, Section 33 about 300 feet east of the Milk River bridge that serves Fort Belknap; FB01b sits in T32N, R22E, Section 14 on the northwest boundary of Fort Belknap; and FB02 is located in T31N, R26E, Section 36 near Dodson Dam.. Milk River serves 616 HUD homes and includes treated drinking water, irrigated croplands, livestock, fishery, recreational use and ceremonial and medicinal zone.

Land ownership includes allotted, tribal original/purchase, state school lands, Bureau of Reclamation lands.

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	M		
Milk River	47			Irrigated crop production		T	
				Pasture land			
				Animal holding/management areas			
				Hydrologic/Habitat. Mod.			
				Dam Construction			
				Flow regulation/modification			
				Bridge construction			

Severity: M=Moderate, T=threatened, S=Severe

Method: M = monitored E= evaluated

3.4.2 Milk River Drainage/White Bear Creek

White Bear Creek is an intermittent prairie stream and is located in the northern section of the Fort Belknap Reservation and flows in a east to west direction and empties into the Milk River. Three monitoring sites are located along White Bear Creek, one being, White Bear Reservoir/FB03 is located in T31N, R25E, Section 28 south of Highway 2; FB29 is located in T31N, R25E, Section 31 a half mile south of Highway 2; and finally FB29b is located in T30N, R23E, Section 15 west of Route 66 near mile marker 41. White Bear Creek serves as range and pasture use for livestock. Agriculture use includes dryland and irrigated farming. Yearly maintenance of the White Bear Irrigation system has reduced the ability of the stream bank to prevent erosion.

Land ownership includes allotted, tribal original/purchase, state school lands.

Water Body	Stream miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	Irrigated		
White Bear Cr.	33.7					Non irrigated crop production	M
						Irrigated	M
						Pasture land	
						Flow regulation/modification	
						Hydrologic/Habitat mod.	

Severity: M=Moderate, T=threatened, S=Severe
Method: M = monitored E= evaluated

3.4.2 Milk River Drainage/Three Mile Coulee

Three Mile Coulee is an intermittent prairie stream, located on the northern part of the Fort Belknap Indian Reservation. Three mile Coulee flow is west to east and empties into the Milk River. Uses are agriculture driven with calving pastures and range lease to area ranchers. **Currently no monitoring sites are established along Three Mile Coulee.** Lands adjacent to the Milk River are irrigated farm lands.

Land ownership includes; Tribal original, purchase, allotted, state school section

Water Body	Streams miles	Pollutant	Source	Subcategories	Severity	Method
Three Mile Coulee	16.8					

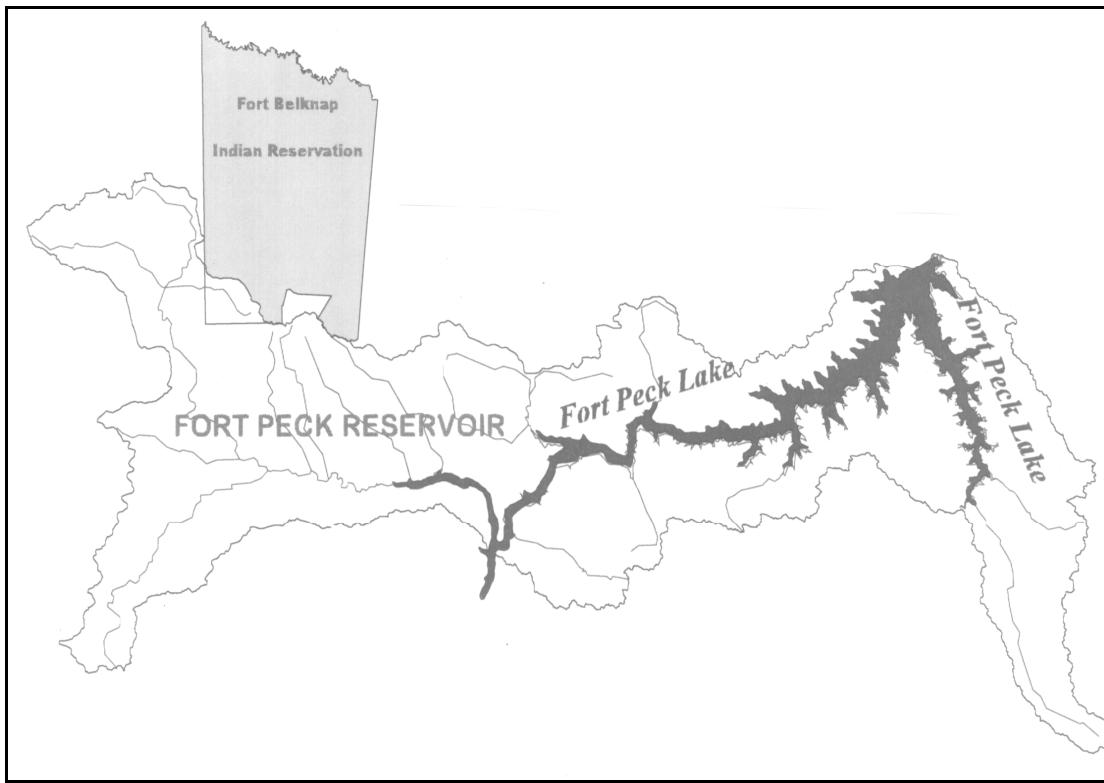
Method: M = monitored E= evaluated

Severity: M=Moderate, T= threatened, S=Severe

3.5 Fort Peck Reservoir Watershed

The Fort Peck Reservoir Watershed is located in the extreme southwest corner of the Fort Belknap Reservation. Two intermittent streams, Duck Creek, flowing in northerly direction and empties into the Little Peoples Creek. Little Suction Creek flows in a southerly directions, which empties into the Missouri River.

Physical and analytical sampling was initiated in the spring of 1999. Data we have compiled too date has not been evaluated.



3.5.1 Peoples Creek Drainage/Duck Creek

This third order prairie stream located on the western boundary of Fort Belknap Reservation and is fed from several springs south of the Lake Seventeen reservoir, which it flows into, then empties into Little People's Creek 6 miles west of Route 66. Duck Creek is 9.01 miles of meandering and ephemeral in nature. One monitoring locations is identified on Duck Creek, FB32 is located in T27N, R22E, Section 23, 1/4 mile northeast of Lake Seventeen. Use of Duck Creek is exclusively rangeland.

Land ownership is predominantly tribal purchase and tribal allotment.

Water Body	Streams miles	Pollutant	Source	Subcategories	Severity	Method
Duck Creek	9.01		Agriculture	Pasture land Range land	M	T

Severity: M=Moderate, T=threatened, S=Severe
 Method: M = monitored E= evaluated

3.5.2 Cow Creek Drainage/Little Suction Creek

Little Suction Creek is a spring fed perennial prairie stream that originates on Fort Belknap Reservation from Running Crow Coulee and Warneke Coulee near the west end of the Little Rocky Mountains. Little Suction Creek has 2 monitoring sites. FB33 is located in T26N, R23E, Section 8, 7.5 miles west of Route 66 and FB33b is located in T 26N, R23E, Section 8 west of Old Woman Butte AKA “Squaw Butte”. Primary uses of Little Suction Creek is rangeland with agricultural in Crop Rotation use. Area is also a hunting and medicinal use zone for berry and root harvest.

Land ownership includes: Tribal Purchase, Tribes allotment, and Sub-marginal lands.

Water Body	Streams miles	Pollutant	Source	Subcategories		Severity	Method
				Agriculture	Range land		
Little Suction Creek	9.14					T	M

Severity: M=Moderate, T= threatened, S=Severe

Method: M = monitored E= evaluated

4.0 FORMULATION OF BEST MANAGEMENT PRACTICES

4.0.1 Agriculture

The Fort Belknap Environmental Protection Programs has contacted the Montana Department of Agriculture to identify pesticide dealers and applicators that may sell to local farmers and ranchers on the Fort Belknap Indian Reservation. Our primary contact is to identify what types of pesticides are applied to fields. In addition, we may need to develop a program for pesticide application, fertilizer management and streambank stabilization.

Cost share programs are available to help pay the cost of applying BMPs, but in most cases, most farmers and ranchers are unable to provide matching funds. The 319 of the Clean Water Act Nonpoint Source Pollution program provides incentives to help farmers and ranchers implement BMP's. Tribal sources may be used to augment implementation of BMP's.

4.0.2 Hydromodification

Best Management Practices for hydromodification and habitat modification often relate directly to other categories of nonpoint source pollution. For example, grazing practices may impact stream hydrology by changing seasonal flow patterns and water yield. Agriculture activities may involve placement of irrigation diversions in streams. The majority of hydromodification activities on Fort Belknap are regulated under Section 404 permits.

4.0.3 Sediment

Sediment affects more stream miles than any other pollutant on the Fort Belknap Reservation. Human activity, including mining, tilling, irrigation, grazing, construction and forestry practices, accelerates natural sediment production. Excess sediment interferes with water treatment, irrigation, fish spawning, and the production of fish food organisms in streams. Other pollutants, such as nutrients and metals, may be absorbed on sediment particles and transported by them into and through aquatic systems.

4.0.4 Nutrients

The nonpoint source nutrients of concern on Fort Belknap Reservation are nitrogen and phosphorus. They originate from fertilizers, animal and human waste, urban runoff, and natural sources. Nutrients may stimulate excessive growth of algae in streams or nuisance aquatic weeds in lakes and reservoirs, rendering water aesthetically unattractive or unsuitable for recreation. Excess nitrate in drinking water may cause methemoglobinemia or "blue baby syndrome" in infants. Grazing and farming practices on the reservation contribute to increased nutrient levels.

4.0.5 Fecal Coliform Bacteria

Fecal Coliform Bacteria is found in the intestines of warm-blooded animals. Their presence in waters indicates that pathogenic organisms may also be present. They are most commonly associated with failing septic tanks and drain fields from individual sewage disposal systems, and grazing animals. Grazing units generally follow surface water sources on the reservation. Most units lack range management plans and, therefore, provide no protection of water sources from fecal coliforms.

4.0.6 Other

Other effects of the present mining activities are Acid Mine Drainage (AMD) from monitored stations in the proximity of the mining area. Elevated counts of Iron “Fe”, Sulfate “SO₄” and pH are indicators of AMD. In the streams near the disturbed areas macroinvertebrates surveys were collected by kick-net method and a majority of the aquatic invertebrates were of high pollution tolerance. Stream bank and alterations and flow alterations reduce the amount of habitat available to fish and aquatic life.

A resolution authorizes submittal of the Assessment Plan to other Federal agencies. Section 319 of the Clean Water Act requires each tribe to describe tribal and local programs for controlling pollution from nonpoint sources. There are numerous programs, administered by a variety of agencies, which aim to control nonpoint source pollution. County conservation district are designated the nonpoint source management agencies for non-federal lands. The program is intended to encourage adoption and implementation of best management practices (BMPs). Technical assistance, education, demonstration projects, and financial assistance are used to implement BMPs.

4.1 Formulation of Best Management Practices

The Bureau of Land Management offers a series of manuals for successful strategies for grazing cattle in riparian zones. BLM’s strategies include general principles of riparian grazing, determining season of use, and reduction of intense use of streams. Which would reduce the possibility of nonpoint pollution through grazing management education.

The U.S. Department of Agriculture 1996 Farm Bill Conservation Provisions Program, Environmental Quality Incentives Program (EQIP), offers financial and educational incentives for implementation of protection for high priority environmental protection on agricultural lands on the Fort Belknap Indian Reservation.

The Corps of Engineers 404 Dredge and Fill Permit Program controls nonpoint source pollution resulting from hydromodification activities.

The Montana Salinity Control Association, a consortium of conservation districts in dryland farming areas, provide educational and technical assistance to implement agricultural management practices to control saline seep.

The Superfund program administered by the U.S. Environmental Protection Agency offers the potential for correcting nonpoint pollution problems related to toxic and hazardous waste sites, including abandoned and/or bankrupt mines waste problems.

5.0 Conclusion

5.1 How This Report Will Be Used

Fort Belknap tribes are working to correct and prevent nonpoint source problems on the Fort Belknap Indian Reservation, but much needs to be done. Solutions are often complex and difficult to develop and expensive to implement. Improved landowner cooperation and agency coordination and additional funding and technical assistance are needed to correct the priority nonpoint source problems.

A much more detailed description of nonpoint source control programs on the reservation will be included in Fort Belknap's Nonpoint Source Management Plan, which is also required under Section 319 of the Federal Clean water Act.

5.2 Best Management Practices

Categories, subcategories and specific source of nonpoint pollution of Fort Belknap Indian Reservation are listed in Table 3 of this report, Section 319 of the Federal Clean Water Act requires each tribe to describe its process for identifying the measures it will use to control these categories, subcategories and source.

Five nonpoint source categories are responsible for a significant fraction of the threatened or impaired waterbodies on the reservation: agriculture, hydromodification, mining, silviculture, and land disposal.

Table 9: Agricultural Best Management Practices

Practice Name	NRCS Code	Agriculture Subcategory
Access Road	560	5
Bedding	310	5
Channel Vegetation	322	1
Chiseling and Subsoiling	324	5
Clearing and Snagging	326	3
Conservation Cover	327	2
Conservation Cropping Sequence	328	2
Contour Buffer Strips	332	1, 2, 3
Cover and Green Manure Crop	340	2
Critical Area Planting	342	1, 2, 3
Crop Residue Use	344	2
Dam, Floodwater Return	402	3
Dike	356	3
Diversion	362	3
Emergency Tillage	365	5
Farmstead and Feedlot Windbreak	380	1, 2
Fencing	382	1
Field Windbreak	392	2
Filter Strip	393	2
Fire Breaks	394	2
Fish Stream Improvements Forage		
Harvest Management	511	2
Forest Harvest Trails and Landings	655	1
Forest Stand Improvements	666	1
Forest Site Preparation	490	1
Grade Stabilization Structure	410	5
Grassed Waterways	412	5
Grazing Land Mechanical Treatment	548	1
Herbaceous Wind Barriers	422	1
Irrigation Canal or Lateral	320	3
Irrigation Field Ditch	388	3
Irrigation Land Leveling	464	3
Irrigation Pit or Regulating Reservoir	552-A-B	3
Irrigation Storage Reservoir	436	3
Irrigation System		
Trickle	441	3
Sprinkler	442	3
Surface and Subsurface	443	3
Irrigation System , Tailwater Recovery	447	
Irrigation Water Conveyance		

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Ditch and Canal Lining	428 A-C	3
Pipeline	430 AA-II	3
Irrigation Water Management	449	3
Land Reclamation "Toxic Discharge"	455	1
Land Reconstruction of Abandoned Mines	543	1
Land Smoothing	446	3
Lined Waterway or Outlet	463	3
Livestock Exclusion	472	1, 2
Mulching	484	1
Nutrient Management	590	2, 3
Pasture and Hayland Management.	510	2
Pasture and Hayland Planting	512	2
Pipline	516	1, 3
Planning Grazing Systems	556	1
Pond	378	1
Pond Sealing or Lining	521-A-E	1
Prescribed Burning	338	2
Proper Grazing Use	528	1
Pumped Well Drain	532	5
Pumping Plant for Water Control	533	5
Range Seeding	550	1, 2
Residue Management	329	2
Restoration and Management of		
Declining Habitat	643	2
Rock Barrier	555	5
Riparian Forest Buffer	391	1
Runoff Management System	570	5
Sediment Basin	350	5
Shallow Water Management for Wildlife	270	1, 2
Soil Salinity Management	573	2
Spring Development	574	1
Streambank and Shoreline Protection	580	1, 2, 3
Stream Channel Stabilization	584	1, 2, 3
Stripcropping		
Field	586	2
Wind	589	2
Structure for Water Control	587	3
Subsurface Drain	606	5
Subsurface Drainage		5
Field Ditch	607	3
Trough or Tank	614	1
Vertical Drain	630	5
Waste, Disposal, on Farm		
Salinity landfill	Interim	5
Waste Management System	312	5
Waste Storage Pond	425	5

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Waste Storage Structure	313	5
Waste Treatment Lagoon	359	5
Water Harvesting Catchment	636	5
Water and Sediment Control Basin	638	5
Waterspreading	640	3
Well	642	1, 3
Wetland Restoration	657	1, 2
Wildlife Upland Habitat Management	645	1, 2, 3
Wildlife Wetland Management Habitat	644	1, 2, 3
Windbreak Establishment	392	2, 3
Windbreak Renovation	650	5

- **Agricultural Subcategories**

1. Rangeland/Grazing/Forestry
2. Dryland/Pasture/Hayland
3. Irrigated
4. Feedlots/Animal Holding
5. Practice not used on the Fort Belknap Indian Community

Appendix

Categories and subcategories of nonpoint sources that have been designated by EPA and used in this report.

Agricultural

Non-Irrigated crop production
Irrigated crop production
Specialty crop production (e.g., truck, or farming)
Pasture lands
Range lands
Animal holding/management areas
Streambank Erosion

Silviculture

Harvesting
Forest management
Road construction/maintenance

Construction

Highway/road/bridges
Land Development
Streambank erosion

Resource Extraction/Exploration/development

Surface Mining
Subsurface Mining
Streambank erosion
Mine tailings
Placer Mining
Mill tailings

Land Disposal

Sludge
Wastewater
Landfills
Industrial land treatment
On-site wastewater systems (septic tanks, etc.)
Hazardous Wastes

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Hydromodification

Channelization
Dredging
Dam Construction/operation
Flow regulation/modification
Streambank erosion
Removal of Riparian vegetation
Streambank modification/destabilization

Other

Atmospheric deposition
Waste storage/storage tank leaks
Highway maintenance and runoff
Spills
In-place contaminates
Natural

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